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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,827	04/22/2005	Marc-Andre Theoleyre	7372	5800
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CASELLA & HESPOS 274 MADISON AVENUE NEW YORK, NY 10016				
EXAMINER				
DEES, NIKKI H				
ART UNIT		PAPER NUMBER		
1794				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/526,827

Applicant(s)

THEOLEYRE, MARC-ANDRE

Examiner

Nikki H. Dees

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 21, 2008, has been entered.
2. Claims 1 and 3-14 are currently pending in the Application. Claim 2 has been cancelled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1 and 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noel (6,383,540) in view of Saska et al. (5,443,650).

5. Noel teaches a method for the demineralization of whey. The method comprises exchanging divalent cations for protons and divalent anions for chloride ions (Claim 1).
6. Noel discloses regeneration of the mixed (cationic and anionic) bed resin, followed by the regeneration of the cationic bed resin using the effluent from the mixed bed (col. 5 lines 16-21).
7. Noel et al. are silent as to the use of an aqueous NaCl solution for the regeneration of the ion exchange resins.
8. Saska et al. teach a method for removing Ca^{2+} and Mg^{2+} from an aqueous sugar solution on a cation exchange resin where the divalent cations are replaced by the monovalent cations Na^+ and K^+ . The cation exchange resin is periodically regenerated using an aqueous NaCl solution (col. 1 lines 33-37).
9. Selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results (see *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have altered the order of the ion exchange resins in order that the solution contact the anion exchange resin prior to or simultaneous with contacting the cation exchange resin.
10. As to the regeneration of the ion-exchange resins, as with the order of performing the ion exchange steps, selection of any order of regeneration would be *prima facie* obvious over the method taught by Noel.
11. Both the method taught by Noel and the method taught by Saska are for use with aqueous solutions of food products. It would have been obvious to one of ordinary skill

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in the art at the time the invention was made to have exchanged cations as taught by Saska et al. in the method taught by Noel in order demineralize the aqueous solution without excessively increasing the acidity of the solution.

12. There are a multitude of commercially available anionic and cationic exchange resins. It would have been well within the ability of one of ordinary skill in the art at the time the invention was made to have selected the appropriate cationic and anionic exchange resins in order to be able to both effectively remove the desired ions from the solution and regenerate the resins with an aqueous sodium chloride solution.

13. Claims 1 and 3-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jönsson (4,159,350) in view of Saska et al. (5,443,650).

14. Jönsson teaches a method of ion exchange for desalination of whey comprising conducting the whey through an anion exchange resin and a cation exchange resin (col. 3 lines 1-3).

15. Jönsson also teaches the regular regeneration of the ion exchange resins (col. 5 lines 5-8).

16. Jönsson is silent as to the use of an aqueous NaCl solution to recharge the ion exchange resins.

17. Saska et al. teach a method for removal of divalent cations as well as regeneration of the ion exchange resin as detailed above.

18. Saska et al. also teach regenerating their ion exchange resin with an aqueous solution of NaCl.

19. Both the method taught by Jönsson and the method taught by Saska are for use with aqueous solutions of food products. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the method comprising both anionic and cationic exchange resins taught by Jönsson with the method taught by Saska et al. using aqueous NaCl to regenerate the ion-exchange resins in order to remove the undesirable multivalent cations and multivalent anions from whey or whey permeate.

Response to Arguments

19. Applicant's arguments filed October 21, 2008, have been fully considered but they are not persuasive.

20. In regard to the 103 rejection of claims 1-14 over Noel in view of Saska, Applicant argues (Remarks, p. 6) that the prior art teaches away from the claimed invention.

21. In response to the argument that Noel teaches away from the method as claimed, the Examiner is unaware of any teaching of Noel that criticizes, discredits, or otherwise discourages the arrangement of resins as claimed. The teachings of Noel are therefore not considered to teach away from the instant claims.

22. Applicant argues (Remarks, p. 7) that as Noel calls for a particular order to the method steps, *Burhans* is not applicable.

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23. While Applicant argues about the steps in Noel, it is noted that *Burhans* speaks to the "cited references considered collectively clearly suggest doing the thing that appellant has done in this case" (emphasis added). The underlined text appears in the opinion immediately prior to the section quoted by Applicant at the top of p. 7 of the Remarks. While Applicant is arguing that Noel does not teach the steps as claimed, it is noted that the rejection is over Noel in view of *Saska*. The combination of Noel and *Saska*, along with the general knowledge one of ordinary skill in the art would have of ion exchange resins and their capabilities, is considered to render the instant claims obvious over the prior art, as detailed in the rejection above. Applicant has not presented convincing arguments or evidence that the claimed order of performing the steps provides unexpected results.

24. Applicant argues that the prior art references relate to different areas (Remarks, p. 8).

25. In response to applicant's argument that Noel and *Saska* are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The Noel and *Saska* references are considered pertinent as they both teach ion exchange methods for use in processing of aqueous solutions of food products. One of ordinary skill would have looked to them to provide methods for removing the desired cations and anions from the processing stream.

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26. In response to the argument that there is no suggestion for a first treatment by monovalent anions (Remarks, p. 8), it is noted that Applicant's claim 1 and Remarks (p. 5) provide for the ion exchange steps to be performed simultaneously. Therefore, it is not necessary for the prior art to suggest a first treatment by monovalent anions such as Cl^- in order to render the claims obvious over the prior art.

27. In regard to the rejection of claims 1-14 over Jönsson in view of Saska, Applicant argues that Jönsson relates to desalination rather than decalcification (Remarks, p. 9).

28. Desalination is understood by one of ordinary skill to encompass the removal of salts, including Ca^{2+} , from materials. "desalination." *The American Heritage® Science Dictionary*. Houghton Mifflin Company. 22 Jan. 2009. <Dictionary.com <http://dictionary.reference.com/browse/desalination>>. Additionally, Jönsson teaches the removal of divalent cations, including Ca^{2+} , in his process (Example 1). Therefore, the teachings of Jönsson are considered closely related to the subject of the instant claims.

29. Applicant further argues that Jönsson and Saska relate to very different technological areas (Remarks, p. 9).

30. As indicated in the Final rejection dated May 21, 2008, in response to applicant's argument that Jönsson and Saska are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The Jönsson and Saska

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references are considered pertinent as they both teach ion exchange methods for use in processing of aqueous solutions of food products. One of ordinary skill would have looked to them to provide methods for removing the desired cations and anions from the processing stream. Further, Jönsson notes the use of ion exchange technology in the sugar industry (col. 2 lines 52-55), indicating that ion exchange technologies are used across the food-treatment industry and one of ordinary skill would indeed look to treatment of other food products in order to improve technologies for treatment of the material at hand.

31. Applicant argues that the claimed result is "much improved" when compared to the prior art processes (Remarks, p. 9).

32. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikki H. Dees whose telephone number is (571) 270-

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3435. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST (second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nikki H. Dees/
Examiner, Art Unit 1794
/Lien T Tran/
Primary Examiner, Art Unit 1794

Nikki H. Dees
Examiner
Art Unit 1794